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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,768

04/05/2006

Karine Valle

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1613

45473

7590

03/02/2011

BRINKS, HOFER, GILSON & LIONE

P.O. BOX 110285

RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

CHOI, LING SIU

ART UNIT

PAPER NUMBER

1762

MAIL DATE

DELIVERY MODE

03/02/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Supplemental
Notice of Allowability**

Application No.

10/542,768

Examiner

Ling-Siu Choi

Applicant(s)

VALLE ET AL.

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment (Rule 312) filed 02/03/2011.
2. ☒ The allowed claim(s) is/are 31-49,61,62 and 66-81.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other ____. |

/Ling-Siu Choi/
Primary Examiner, Art Unit 1762

DETAILED ACTION

1. This Office Action is in response to the Amendment (Rule 312) filed 02/03/ 2011. Claims 68-81 have been added and Claims 31-49, 61-62, and 66-81 are now pending.

Allowable Subject Matter

2. Claims 31-49, 61-62, and 66-81 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest references: Bardot et al. (US 5,342,521) and Brinker et al. (US 6,270,846 B1).

Summary of Claim 31:

An organic-inorganic hybrid material comprising two phases:	
	a first, mineral phase comprising a structured mesoporous network with open porosity; wherein the structured mesoporous network exhibits an <u>organized structure with a repeating unit</u> ; and
	a second, organic phase comprising an organic polymer, said organic phase not participating in creating the structured mesoporous network of the mineral phase and being essentially not present inside the pores of the structured mesoporous network of the mineral phase

Bardot et al. disclose a reverse osmosis or nanofiltration membrane [an organic inorganic hybrid material], comprising a porous inorganic material support coated on one face with a first mesoporous, inorganic material layer having a mean pore radius below 10 nm and a second active layer located on the first mesoporous layer and having a thickness of 0.1-1 μm , prepared from an organic polymer selected from the group consisting of sulfonated polysulfones, polybenzimidazolones, polyvinylidene fluorides having diaminoethyl methacrylate grafted thereon, and perfluorine ionomer, wherein the inorganic material of the first mesoporous layer is titanium dioxide, zirconium dioxide or alumina (claims 1-3). However, Bardot et al. do not teach or fairly suggest the claimed organic-inorganic hybrid material, wherein the hybrid material comprising **a first, mineral phase** comprising a structured mesoporous network with open porosity, wherein the structured mesoporous network exhibits an organized structure with a repeating unit; and **a second, organic phase** comprising an organic polymer which does not participate in creating the structured mesoporous network of the mineral phase and is essentially not present inside the pores of the structured mesoporous network of the mineral phase.

Brinker et al. disclose a high-porosity, surfactant-templated thin film [an organic-inorganic hybrid material] obtained by evaporation-induced self-assembly method, the method comprising: (A) mixing a precursor sol, a solvent, water, a surfactant, and a hydrophobic polymer to form a homogeneous mixture, wherein the hydrophobic polymer is soluble in the sol and the surfactant is at a concentration less than the critical micelle concentration; (B) coating a substrate with the homogeneous mixture to form a

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thin film, the coating inducing evaporation of a portion of the solvent to produce a surfactant-stabilized microemulsion dispersed within a hybrid surfactant - silica matrix; and (C) heating the thin film to form a high-porosity, surfactant- and microemulsion-templated thin film (claims 1-5). However, Brinker et al. do not teach or fairly suggest the claimed organic-inorganic hybrid material, wherein the hybrid material comprising **a first, mineral phase** comprising a structured mesoporous network with open porosity, wherein the structured mesoporous network exhibits an organized structure with a repeating unit; and **a second, organic phase** comprising an organic polymer which does not participate in creating the structured mesoporous network of the mineral phase and is essentially not present inside the pores of the structured mesoporous network of the mineral phase.

Since the claimed organic-inorganic hybrid material is allowable, the process to make the claimed organic-inorganic hybrid material and the product comprising such hybrid material are also allowable because of the reasons given above for the hybrid material.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Ling-Siu Choi/

Primary Examiner, Art Unit 1762

February 15, 2011

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